

# Notice of Allowability

Application No.

09/974,725

Examiner

Daniel S. Metzmaier

Applicant(s)

WANG ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 15 September 2005 & Interview of 25 Nov. 2005.
2. ☒ The allowed claim(s) is/are 1-16, 18, 20-35, 37, 39 and 49.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 11/25/2005.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

### **EXAMINER'S AMENDMENT**

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Bruce S. Itchkawitz on November 25, 2005.

The application has been amended as follows:

Replace all previous claim lists with the claim list beginning of page 3 of this amendment.

*Amendment to the claims begin*

1. (Previously presented) A method of forming a gel monolith, the method comprising:
  - preparing a first solution comprising metal alkoxide;
  - preparing a second solution comprising a catalyst of metal alkoxide hydrolysis and polymerization;
  - preparing a third solution by mixing the first solution and the second solution together, the third solution having a catalyst concentration greater than 3 mole percent of the third solution;
  - cooling at least one of the first, second, and third solutions to achieve a mixture temperature for the third solution which is approximately equal to or less than zero degrees Celsius, wherein the third solution has a significantly longer gelation time at the mixture temperature as compared to a room temperature gelation time for the third solution; and
  - allowing the third solution to gel, thereby forming the gel monolith.
2. (Original) The method of Claim 1, wherein the metal alkoxide comprises tetramethylorthosilicate (TMOS).
3. (Original) The method of Claim 2, wherein the metal alkoxide further comprises tetraethylorthogermanium (TEOG).
4. (Original) The method of Claim 1, wherein the metal alkoxide comprises tetraethylorthosilicate (TEOS).

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5. (Original) The method of Claim 4, wherein the metal alkoxide further comprises tetraethylorthogermanium (TEOG).
6. (Original) The method of Claim 1, wherein the first solution further comprises a solvent.
7. (Original) The method of Claim 6, wherein the solvent comprises alcohol.
8. (Original) The method of Claim 1, wherein the catalyst comprises hydrofluoric acid.
9. (Original) The method of Claim 1, wherein the catalyst comprises ammonia.
10. (Original) The method of Claim 1, wherein the second solution further comprises water.
11. (Original) The method of Claim 1, wherein the second solution further comprises hydrochloric acid.
12. (Original) The method of Claim 1, wherein the second solution further comprises a solvent.
13. (Original) The method of Claim 1, wherein cooling at least one of the first, second, and third solutions comprises cooling the third solution while mixing the first solution and second solution.
14. (Original) The method of Claim 1, wherein cooling at least one of the first, second, and third solutions comprises cooling the third solution after mixing of the first solution and second solution.

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15. (Original) The method of Claim 1, wherein cooling at least one of the first, second, and third solutions comprises cooling the first solution before mixing the first solution and second solution.
16. (Original) The method of Claim 1, wherein cooling at least one of the first, second, and third solutions comprises cooling the second solution before mixing the first solution and second solution.
17. (Cancelled).
18. (Original) The method of Claim 1, wherein the mixture temperature is approximately equal to or less than -10 degrees Celsius.
19. (Cancelled).
20. (Previously presented) The method of Claim 1, wherein the mixture temperature is approximately equal to or less than -40 degrees Celsius.
21. (Original) The method of Claim 1, wherein preparing the first solution comprises cooling the first solution.
22. (Original) The method of Claim 1, wherein preparing the first solution comprises mixing the metal alkoxide with a solvent and cooling the first solution.
23. (Original) The method of Claim 1, wherein preparing the second solution comprises cooling the second solution.
24. (Original) The method of Claim 1, wherein preparing the second solution comprises mixing the catalyst with water and cooling the second solution.
25. (Original) The method of Claim 1, wherein preparing the third solution comprises mixing the first solution and the second solution together in a third vessel.

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26. (Original) The method of Claim 25, wherein the third vessel comprises a static mixer.
27. (Original) The method of Claim 25, wherein the third vessel is in an ice bath to cool the third solution.
28. (Original) The method of Claim 25, wherein the third vessel is in a refrigerator to cool the third solution.
29. (Original) The method of Claim 25, wherein the third vessel is in a glycol bath comprising propylene glycol and water to cool the third solution.
30. (Original) The method of Claim 29, wherein the glycol bath is coupled to a chiller.
31. (Original) The method of Claim 25, wherein the third vessel is in a glycol bath comprising ethylene glycol and water to cool the third solution.
32. (Original) The method of Claim 25, wherein the third vessel is in a freezer to cool the third solution.
33. (Original) The method of Claim 25, wherein the third vessel is in a dry ice bath comprising dry ice, propylene glycol, and water to cool the third solution.
34. (Original) The method of Claim 25, wherein the third vessel is in a dry ice bath comprising dry ice, ethylene glycol, and water to cool the third solution.
35. (Original) The method of Claim 1, wherein cooling the third solution comprises bubbling nitrogen vapor from a liquid nitrogen reservoir through the third solution.
36. (Cancelled).
37. (Previously presented) A method of processing a solution comprising a catalyst of metal alkoxide hydrolysis and polymerization, water, and metal alkoxide, the solution

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having a catalyst concentration greater than 3 mole percent of the solution, the method comprising extending a gelation time of the solution by keeping the solution at a predetermined temperature approximately equal to or less than zero degrees Celsius.

38. (Cancelled).

39. (Original) The method of Claim 37, wherein the predetermined temperature is approximately equal to or less than -10 degrees Celsius.

40-48. (Cancelled).

49. (Currently amended) A method of preparing a solution for forming a gel monolith, the method comprising:

providing a first solution comprising metal alkoxide;

providing a second solution comprising a catalyst of metal alkoxide hydrolysis and polymerization;

mixing the first solution and the second solution together to form a third solution, the third solution having a catalyst concentration greater than 3 mole percent of the third solution; and

cooling at least one of the first, second, and third solutions to achieve a mixture temperature for the third solution which is approximately equal to or less than zero degrees Celsius ~~substantially below room temperature~~, wherein the third solution has a significantly longer gelation time at the mixture temperature as compared to a room temperature gelation time for the third solution.

50. (Cancelled).

*Claim amendment end*

***Reasons for allowance***

2. The following is an examiner's statement of reasons for allowance: the amendment makes the claim read more clearly and is consistent with the language of the other claims. Applicants response obviate the rejections of the last Office Action. While US application number 10/871,198 could be the basis for a Provisional Obviousness Double Patenting (ODP) Issue, attention is directed to MPEP 822.01, wherein the Provisional ODP is the sole remaining issue herein.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Drawings***

3. The drawings were received on November 13, 2004. These drawings are accepted.


***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Metzmaier whose telephone number is (571) 272-1089. The examiner can normally be reached on 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**Daniel S. Metzmaier**  
**Primary Examiner**  
**Art Unit 1712**

DSM